FORM PTO-1390 (Modified) (REV 11-2000) U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE

TRANSMITTAL LETTER TO THE UNITED STATES DESIGNATED/ELECTED OFFICE (DO/EO/US) CONCERNING A FILING UNDER 35 U.S.C. 371

ATTORNEY'S DOCKET NUMBER: **KSN0030**

U.S. APPLICATION NO. (IF KNOWN, SEE 37 CFR): **10/089248**

INTERNATIONAL APPLICATION NO.	INTERNATIONAL FILING DATE	PRIORITY DATE CLAIMED
PCT/DE00/03462	**28 September 2000**	**29 September 1999**

TITLE OF INVENTION

METHOD FOR SAFELY COUPLING AN EXTERNAL VOLTAGE NETWORK TO A SERVICE VOLTAGE NETWORK AND CIRCUIT CONFIGURATION FOR CARRYING OUT SAID METHOD

APPLICANT(S) FOR DO/EO/US

Bican Samray

Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information:

1. ☒ This is a **FIRST** submission of items concerning a filing under 35 U.S.C. 371.
2. ☐ This is a **SECOND** or **SUBSEQUENT** submission of items concerning a filing under 35 U.S.C. 371.
3. ☐ This is an express request to begin national examination procedures (35 U.S.C. 371(f)). The submission must include itens (5), (6), (9) and (24) indicated below.
4. ☒ The US has been elected by the expiration of 19 months from the priority date (Article 31).
5. ☒ A copy of the International Application as filed (35 U.S.C. 371 (c) (2))
   a. ☐ is attached hereto (required only if not communicated by the International Bureau).
   b. ☒ has been communicated by the International Bureau.
   c. ☐ is not required, as the application was filed in the United States Receiving Office (RO/US).
6. ☒ An English language translation of the International Application as filed (35 U.S.C. 371(c)(2)).
   a. ☒ is attached hereto.
   b. ☐ has been previously submitted under 35 U.S.C. 154(d)(4).
7. ☐ Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371 (c)(3))
   a. ☐ are attached hereto (required only if not communicated by the International Bureau).
   b. ☐ have been communicated by the International Bureau.
   c. ☐ have not been made; however, the time limit for making such amendments has NOT expired.
   d. ☐ have not been made and will not be made.
8. ☐ An English language translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371(c)(3)).
9. ☐ An oath or declaration of the inventor(s) (35 U.S.C. 371 (c)(4)).
10. ☒ An English language translation of the annexes to the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371 (c)(5)).
11. ☒ A copy of the International Preliminary Examination Report (PCT/IPEA/409).
12. ☒ A copy of the International Search Report (PCT/ISA/210).

Items 13 to 20 below concern document(s) or information included:

13. ☐ An Information Disclosure Statement under 37 CFR 1.97 and 1.98.
14. ☐ An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included.
15. ☒ A **FIRST** preliminary amendment.
16. ☐ A **SECOND** or **SUBSEQUENT** preliminary amendment.
17. ☐ A substitute specification.
18. ☐ A change of power of attorney and/or address letter.
19. ☐ A computer-readable form of the sequence listing in accordance with PCT Rule 13ter.2 and 35 U.S.C. 1.821 - 1.825.
20. ☐ A second copy of the published international application under 35 U.S.C. 154(d)(4).
21. ☐ A second copy of the English language translation of the international application under 35 U.S.C. 154(d)(4).
22. ☒ Certificate of Mailing by Express Mail
23. ☒ Other items or information:

Check No. 15632 **($890); Return Postcard**

U.S. APPLICATION NO. (IF KNOWN, SEE 37 CFR)	INTERNATIONAL APPLICATION NO.	ATTORNEY'S DOCKET NUMBER
10/089248	PCT/DE00/03462	KSN0030

24. The following fees are submitted:.		CALCULATIONS PTO USE ONLY	
BASIC NATIONAL FEE (37 CFR 1.492 (a) (1) - (5)) :			
☐ Neither international preliminary examination fee (37 CFR 1.482) nor international search fee (37 CFR 1.445(a)(2)) paid to USPTO and International Search Report not prepared by the EPO or JPO	**$1040.00**		
☒ International preliminary examination fee (37 CFR 1.482) not paid to USPTO but International Search Report prepared by the EPO or JPO	**$890.00**		
☐ International preliminary examination fee (37 CFR 1.482) not paid to USPTO but international search fee (37 CFR 1.445(a)(2)) paid to USPTO	**$740.00**		
☐ International preliminary examination fee (37 CFR 1.482) paid to USPTO but all claims did not satisfy provisions of PCT Article 33(1)-(4)	**$710.00**		
☐ International preliminary examination fee (37 CFR 1.482) paid to USPTO and all claims satisfied provisions of PCT Article 33(1)-(4)	**$100.00**		
ENTER APPROPRIATE BASIC FEE AMOUNT =		**$890.00**	
Surcharge of **$130.00** for furnishing the oath or declaration later than ☐ 20 ☐ 30 months from the earliest claimed priority date (37 CFR 1.492 (e)).		**$0.00**	

CLAIMS	NUMBER FILED	NUMBER EXTRA	RATE		
Total claims	12 - 20 =	0	x $18.00	**$0.00**	
Independent claims	1 - 3 =	0	x $84.00	**$0.00**	
Multiple Dependent Claims **(check if applicable)**.			☐	**$0.00**	
TOTAL OF ABOVE CALCULATIONS =				**$890.00**	
☐ Applicant claims small entity status. See 37 CFR 1.27). The fees indicated above are reduced by 1/2.				**$0.00**	
SUBTOTAL =				**$890.00**	
Processing fee of **$130.00** for furnishing the English translation later than ☐ 20 ☐ 30 months from the earliest claimed priority date (37 CFR 1.492 (f)). +				**$0.00**	
TOTAL NATIONAL FEE =				**$890.00**	
Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31) **(check if applicable).** ☐				**$0.00**	
TOTAL FEES ENCLOSED =				**$890.00**	
				Amount to be: refunded	$
				charged	$

a. ☒ A check in the amount of **$890.00** to cover the above fees is enclosed.

b. ☐ Please charge my Deposit Account No. _____ in the amount of _____ to cover the above fees. A duplicate copy of this sheet is enclosed.

c. ☒ The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. **02-0387** A duplicate copy of this sheet is enclosed.

d. ☐ Fees are to be charged to a credit card. **WARNING:** Information on this form may become public. **Credit card information should not be included on this form.** Provide credit card information and authorization on PTO-2038.

NOTE: Where an appropriate time limit under 37 CFR 1.494 or 1.495 has not been met, a petition to revive (37 CFR 1.137(a) or (b)) must be filed and granted to restore the application to pending status.

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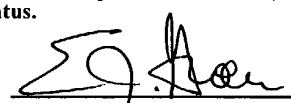


SIGNATURE

Eric J. Groen

NAME

32,230

REGISTRATION NUMBER

March 28, 2002

DATE

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant	:	Bican Samray
Filed	:	PCT/DE00/03462 (September 28, 2000)
Serial No.	:	
Title	:	METHOD FOR SAFELY COUPLING AN EXTERNAL VOLTAGE NETWORK TO A SERVICE VOLTAGE NETWORK AND CIRCUIT CONFIGURATION FOR CARRYING OUT SAID METHOD
Group/Art Unit	:	
Examiner	:	
Docket No.	:	KSN0030

Honorable Commissioner for Patents
Washington, D.C. 20231

Sir:

PRELIMINARY AMENDMENT

In the above-mentioned PCT application, please accept the enclosed application under the national stage pursuant to 35 USC §371 and amend the application as follows:

In the Claims:

Please replace claims 1-12 of the application with claims 1-12 as follows:

1. A method for safely coupling an external voltage network to an operating voltage network, in particular of a motor vehicle, in which at least one controllable switch is arranged between the operating voltage network and a connecting terminal, the at least one controllable switch is connected to a control unit, the connecting terminal is designed for connection of the external voltage network and the method comprises the following steps:

– measuring the voltage at the connecting terminal,

- examining whether the measurement voltage is not below a lower threshold value and not in excess of an upper threshold value,
- closing the controllable switch if the measurement voltage is within the permissible range,
- measuring the current flowing between the connecting terminal and the operating voltage network,
- examining whether the current is not below a lower threshold value,
- opening the at least one controllable switch if the current is outside the permissible range.

2. A method according to claim 1, wherein the method steps are carried out with activated ignition lock only.

3. A method according to claim 1, wherein the controllable switch is opened when the current between the connecting terminal and the operating voltage network is in excess of an upper threshold value.

4. A method according to claim 1, wherein after opening of the controllable switch, this state is maintained until the voltage at the connecting terminal drops to zero or falls below a lower threshold value.

5. A method according to claim 1, wherein the measurement of the voltage at the connecting terminal is carried out permanently during the entire process.

6. A method according to claim 1, wherein the results of the measurement result examination steps are output via a display unit.

7. A method according to claim 1, wherein after opening of the at least one controllable switch, said switch is closed again at regular intervals in order to determine whether the operational state that caused opening of said switch is still present.

8. A circuit arrangement for carrying out the method according to claim 1.

9. A circuit arrangement according to claim 8, wherein the controllable switch is a relay.

10. A circuit arrangement according to claim 8, wherein connecting terminal is covered by a cap and the latter is connected to a switch such that the switching state of said switch changes upon removal of the cap from the connecting terminal.

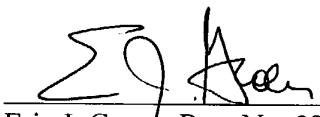
11. A circuit arrangement according to claim 8, wherein the operating voltage network is the supply network of a first motor vehicle and that the external voltage network is the supply network of a second motor vehicle, or a charging device.

12. A circuit arrangement according to claim 8, wherein a measurement resistor is connected between the terminal means of the connecting terminal.

REMARKS

Applicant respectfully requests that the above preliminary amendment be entered, and that the fees due herewith are calculated using the new claims, not the claims of the PCT application.

Respectfully submitted,



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Translation of Annexes to the IPER

Amended pages 1, 1a, 2:

Description

Method for Safely Coupling an External Voltage Network to an Operating Voltage Network and Circuit Arrangement for Carrying out Said Method

The invention relates to a method for safely coupling an external voltage network to an operating voltage network, in particular of a motor vehicle, and to a circuit arrangement for carrying out said method.

In coupling two voltage networks with each other, care is to be taken that the two voltages are compatible. The parameters of the voltages are their value, their polarity in case of dc voltage and the frequency as well as the phase in case of ac voltage. If there are two voltage networks coupled with each other in which these characteristics are not in conformity, damage in the voltage networks or failure in operation may result.

To avoid damage, it is known to connect fuses in the current path which separate the connection between the voltage networks in case of inadmissibly high current. However, such fuses do not provide protection against too high voltages.

In case of motor vehicles, there is the additional difficulty that different voltage levels will be utilized in the future in the on-board networks of motor vehicles. This constitutes a problem in particular if, in case of failure of the battery of a motor vehicle, a jumper operation is carried out by connecting the on-board network to the on-board network of another vehicle, since there is the risk in that event that different on-board networks are interconnected.

The document DE–A–197 19 919 discloses a method for safely coupling an external voltage network to an operating voltage network, in particular of a motor vehicle, in which at least one controllable switch is arranged between the operating voltage network and a connecting terminal, the at least one controllable switch is connected to a control unit, the connecting terminal is designed for connection of the external voltage network and the method comprises the followings steps:

Measuring the polarity at the connecting terminal and examining whether the voltage is not in excess of a threshold value. If the measurement voltage is not within the permissible range, the controllable switch is opened. The current flowing between connecting terminal and operating voltage network is then measured and it is examined whether the current is not below a lower threshold value. If the current intensity is outside the permissible range, the controllable switch is opened.

A similar method is known from DE–A–197 02 116.

In the prior art according to the two documents mentioned above, it is tolerated, for example in case of wrong polarization, that there is a high balancing current flowing first. This has the afore–mentioned effect of causing possible damage.

It is an object of the invention to indicate a method that ensures safe coupling of an external voltage network to an operating voltage network, in particular of a motor vehicle, such that damage to the voltage networks is prevented. According to the invention, this object is met by a method having the features indicated in claim 1.

A suitable circuit arrangement for the method is indicated in claim 8.

The method is advantageous since damage to one of the voltage networks by excess current or overvoltage is prevented on the one hand, while the end of a balancing operation between the networks is recognized as well on

the other hand, namely when the current drops below a preset threshold value.

Furthermore, it is advantageous that a permissible voltage range may be preset within which the voltage of the external voltage network may reside.

It is particularly advantageous that no parts, such as e.g. fuses, have to be replaced upon occurrence of an error. Locking after opening of the switch...

(... is advantageous since uncontrolled re-activation of the controllable switch is thus prevented.)

Note: the passage in parentheses is not part of amended page 2, but indicates the English text that was not amended in this paragraph)

B. The latter has an on–board network BN2, a starter motor S2 as well as a battery with a voltage U_B.

The voltage supply concept making use of two batteries with different voltages copes with future vehicle generations in which the starter circuit is operated with 36 V, for example, whereas the on–board network is operated with conventional apparatus and instruments using 12 V.

The switching unit SG is allocated to the first vehicle A. It is arranged between connecting terminal VK and operating voltage network BN. Switching unit SG comprises a control unit SE, the controllable switch Q_2, a measurement resistor R_m, an additional switch Q_1 as well as a third switch Q3. Switch Q_1 interrupts the voltage supply of control unit SE. Controllable switch Q_2 is controlled by control unit SE. In addition thereto, control unit SE is connected to connecting terminal VK, so that the voltage U_{VK} at the connecting terminal VK can be determined via this line. In addition thereto, a current measuring means ME_I is connected in the current path between connecting terminal VK and operating voltage network BN, with a connecting being also provided between current measuring means ME_I and control unit SE. A display unit AE is connected to control unit SE.

Switch Q_1 may be connected to the ignition lock of vehicle A or to another control unit. An additional switch Q_3 may be connected thereto in addition, said switch Q_3 being arranged in series or in parallel to switch Q_1. In an expedient embodiment, said switch Q_3 is coupled to a cap AK that hides connecting terminal VK and has to be folded away for connection of a jumper cable SK. Anyway, the switch Q_1, or the combination of switches Q_1 and Q_3, has the effect that the switching unit SG measures current and voltage only when the vehicle is operative or when an external starting operation or jumper operation is being carried out.

The mode of operation and the cooperation of the individual components takes place in accordance with the flow diagram according to Fig. 2. The sequence relates to an embodiment according to Fig. 1, with switch Q_1 be–

ing controlled by the ignition lock. After the ignition lock Q_1 has released the voltage supply of control unit SE, the terminal voltage U_{VK} at the connecting terminal VK is measured. If the voltage is within a specific range that is limited by threshold voltages U_{min} and U_{max}, switch Q_2 is closed. If the voltage is not within this range, the measurement of the terminal voltage U_{VK} is continued and switch Q_2 remains open. If there is no external voltage network FN connected, there is no voltage applied to connecting terminal VK, either, and switch Q_2 is not closed. Upon closing of switch Q_2, there is a current I flowing over the current path from connecting terminal VK to the battery with the voltage U_{A2} and the voltage transformer W, respectively. It is possible to determine from this current I whether there is an error present in the charging circuit, namely when the current is higher than a maximum value I_{max}, or whether the battery is charged sufficiently, namely when the current drops below the threshold I_{min}. If the current measured is between I_{min} and I_{max}, switch Q_2 remains closed, and if the current is outside of this range, switch Q_2 is opened. If the current drops below the minimum value I_{min} upon sufficient charging of the battery, a starting operation can be carried out via the ignition lock. In a preferred embodiment, switch Q_2 is in the form of a relay. Another possibility would be to realize the switch Q_2 as load disconnecting switch which may be electrically switched on again. The current I between connecting terminal VK and operating voltage network BN, of course, may flow also in the opposite direction if vehicle A performs a jumper operation. The vehicle is protected in that event as well.

Upon opening of Q_2, the measurement of the terminal voltage U_{VK} is continued, but a locking feature prevents the switch Q_2 from closing again. The locking is released only when the voltage U_{VK} at connecting terminal VK drops to zero or below the lower threshold value U_{min}, i.e. when the jumper cable SK is disconnected from connecting terminal VK. Upon release of the jumper cable SK, the switching unit SG returns to the normal state, so that the operation starts anew. If switch Q_3 is coupled to a covering cap AK, the locking feature may also be effected depending on this cap. Preferably, locking is controlled by control unit SE, for example by corresponding connection or programming of the control logic. If a load disconnecting switch is

employed, reactivation can be delayed until the terminal voltage U_{VK} has dropped to zero.

In accordance with a further development of the invention, switch Q_2 is closed at regular intervals and a measurement is carried out so as to thus check automatically whether a new starting or charging operation is to be started or whether a previous error is still present. Sampling of switch Q_1 and possibly switch Q_3 may also be part of this checking operation. This is realized in the drawing figure by a timer that releases the locking state at regular intervals by a corresponding control signal.

Switching unit SG may comprise several controllable switches. The number of switches is dependent on whether the connection is to remain separated in case of incompatibility of the voltage networks only, for example, as described so far, or whether the external voltage network FN is to be coupled to one of several partial systems of the operating voltage network BN, depending on the particular voltage of the external voltage network FN. Additional switches or additional contacts in the switches provided, so that change-over switches are formed, are required if, in case of different polarities of the external voltage network FN and the operating voltage network BN, this is to be corrected automatically.

When dc voltage networks are coupled, for which the method according to the invention and the circuit arrangement according to the invention, respectively, are suitable just as well, the circuit arrangement becomes more complex. In addition to the voltage value or voltage amplitude, the frequency and the phase position have to be taken into consideration. Instead of a dc to dc converter, transformers may be used here. It is also conceivable that DC/AC converters or AC/DC converters may be utilized. In coupling three-phase current networks, the phase sequence of the three conductors is to be considered in addition. The coupling method according to the invention, however, remains the same in all cases and only the circuit arrangement needs to be supplemented by corresponding components.

Amended Pages 8, 9, 9a, 10:

Claims

1. A method for safely coupling an external voltage network to an operating voltage network, in particular of a motor vehicle,
in which at least one controllable switch (Q_2) is arranged between the operating voltage network (BN) and a connecting terminal (VK), the at least one controllable switch is connected to a control unit (SG), the connecting terminal (VK) is designed for connection of the external voltage network (FN) and the method comprises the following steps:

   - measuring the voltage at the connecting terminal (VK),
   - examining whether the measurement voltage is not below a lower threshold value and not in excess of an upper threshold value,
   - closing the controllable switch (Q_2) if the measurement voltage is within the permissible range,
   - measuring the current flowing between the connecting terminal (VK) and the operating voltage network (BN),
   - examining whether the current is not below a lower threshold value,
   - opening the at least one controllable switch (Q_2) if the current is outside the permissible range.

2. A method according to claim 1,
characterized in that the method steps are carried out with activated ignition lock (Q_1) only.

3. A method according to claim 1,

characterized in that the controllable switch (Q_2) is opened when the current between the connecting terminal (VK) and the operating voltage network (BN) is in excess of an upper threshold value.

4. A method according to claim 1,
characterized in that, after opening of the controllable switch (Q_2), this state is maintained until the voltage at the connecting terminal (VK) drops to zero or falls below a lower threshold value.

5. A method according to claim 1,
characterized in that the measurement of the voltage at the connecting terminal (VK) is carried out permanently during the entire process.

6. A method according to claim 1,
characterized in that the results of the measurement result examination steps are output via a display unit (AE).

7. A method according to claim 1,
characterized in that, after opening of the at least one controllable switch (Q_2), said switch (Q_2) is closed again at regular intervals in order to determine whether the operational state that caused opening of said switch (Q_2) is still present.

8. A circuit arrangement for carrying out the method according to any of claims 1 to 7, comprising:

- a measuring means for measuring the voltage at the connecting terminal (VK),

- an examining means for examining whether the measurement voltage is not below a lower threshold value and not in excess of an upper threshold value,

- a means for closing the controllable switch (Q_2) if the measurement voltage is within the permissible range,

- a means (ME_I) for measuring the current flowing between the connecting terminal (VK) and the operating voltage network (BN),

- a means for examining whether the current is not below a lower threshold value,

- a means for opening the at least one controllable switch (Q_2) if the current is outside the permissible range.

9. A circuit arrangement according to claim 8,
characterized in that the controllable switch (Q_2) is a relay.

10. A circuit arrangement according to claim 8 or 9,
characterized in that the connecting terminal (VK) is covered by a cap (AK) and the latter is connected to a switch (Q_3) such that the switching state of said switch (Q_3) changes upon removal of the cap from the connecting terminal (VK).

11. A circuit arrangement according to any of claims 8 to 10,
characterized in that the operating voltage network (BN) is the supply network of a first motor vehicle (A) and that the external voltage network (FN) is the supply network of a second motor vehicle (B), or a charging device.

12. A circuit arrangement according to claim 8,
characterized in that a measurement resistor (Rm) is connected between the terminal means of the connecting terminal (VK).

Abstract

The inventive method makes sure when two networks are coupled that no damage is caused due to inadmissibly high currents or different voltages. To this end, a switch (Q_2) is interposed between the operating voltage network (BN) and a connecting terminal (VK), said switch being controlled by a control unit (SE). The switch (Q_2) is closed only when the voltage networks are compatible. Once the switch (Q_2) is closed, the current (I) now flowing is measured. If the value is below a threshold value, the switch is opened. The circuit configuration serves to carry out the method, for example for coupling two vehicles for performing an external jumper operation. In an expedient embodiment, the controllable switch (Q_2) is a relay.

Docket No.
KSN0030

Declaration and Power of Attorney For Patent Application

English Language Declaration

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name,

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled

METHOD FOR SAFELY COUPLING AN EXTERNAL VOLTAGE NETWORK TO A SERVICE VOLTAGE NETWORK AND CIRCUIT CONFIGURATION FOR CARRYING OUT SAID METHOD

the specification of which

(check one)

☐ is attached hereto.

☒ was filed on **March 28, 2002** as United States Application No. or PCT International Application Number **10/089,248**

and was amended on **March 28, 2002**

(if applicable)

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose to the United States Patent and Trademark Office all information known to me to be material to patentability as defined in Title 37, Code of Federal Regulations, Section 1.56.

I hereby claim foreign priority benefits under Title 35, United States Code, Section 119(a)-(d) or Section 365(b) of any foreign application(s) for patent or inventor's certificate, or Section 365(a) of any PCT International application which designated at least one country other than the United States, listed below and have also identified below, by checking the box, any foreign application for patent or inventor's certificate or PCT International application having a filing date before that of the application on which priority is claimed.

Prior Foreign Application(s)			Priority Not Claimed
DE 19946744.7	**Germany**	**29 September 1999**	☐
(Number)	(Country)	(Day/Month/Year Filed)	
			☐
(Number)	(Country)	(Day/Month/Year Filed)	
			☐
(Number)	(Country)	(Day/Month/Year Filed)	

I hereby claim the benefit under 35 U.S.C. Section 119(e) of any United States provisional application(s) listed below:

(Application Serial No.)	(Filing Date)
(Application Serial No.)	(Filing Date)
(Application Serial No.)	(Filing Date)

I hereby claim the benefit under 35 U. S. C. Section 120 of any United States application(s), or Section 365(c) of any PCT International application designating the United States, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT International application in the manner provided by the first paragraph of 35 U.S.C. Section 112, I acknowledge the duty to disclose to the United States Patent and Trademark Office all information known to me to be material to patentability as defined in Title 37, C. F. R., Section 1.56 which became available between the filing date of the prior application and the national or PCT International filing date of this application:

PCT/DE00/03462	**28 September 2000**	**Pending**
(Application Serial No.)	(Filing Date)	(Status) (patented, pending, abandoned)
(Application Serial No.)	(Filing Date)	(Status) (patented, pending, abandoned)
(Application Serial No.)	(Filing Date)	(Status) (patented, pending, abandoned)

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

POWER OF ATTORNEY: As a named inventor, I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith. *(list name and registration number)*

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Michael S. Gzybowski, 32,816
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Anthony Niewyk, 24,871
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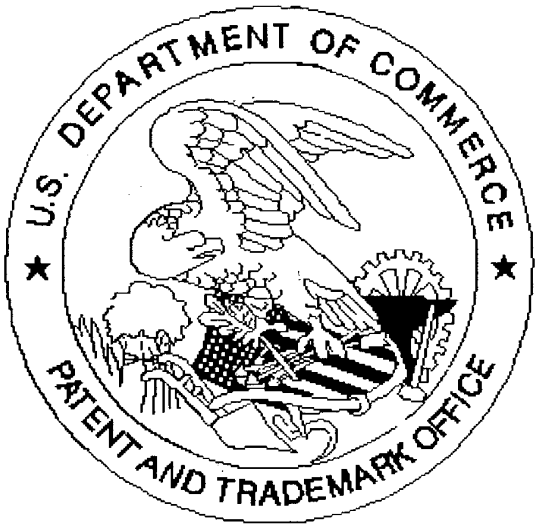
Full name of second inventor, if any
Second inventor's signature Date
Residence
Citizenship
Post Office Address

United States Patent & Trademark Office

Office of Initial Patent Examination -- Scanning Division



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